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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,412

05/15/2006

Job Cornelis Oostveen

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS

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BRIARCLIFF MANOR, NY 10510

EXAMINER

CHAWAN, SHEELA C

ART UNIT

PAPER NUMBER

2624

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,412	Applicant(s) OOSTVEEN ET AL.	
	Examiner SHEELA C. CHAWAN	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7 and 8 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 9 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Preliminary Amendment

2. Preliminary amendment filed on 5/15/06 has been entered.

Drawings

3. The Examiner has approved drawings filed on 5/15/06.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1- 6 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. The Federal Circuit¹, relying upon Supreme Court precedent², has indicated that a statutory “process” under 35 U.S.C. 101 must (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. This is referred to as the “machine or transformation test”, whereby the recitation of a particular machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility (See *Benson*, 409 U.S. at 71-72), and the involvement of the machine or transformation in the claimed

¹ *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

² *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

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process must not merely be insignificant extra-solution activity (See *Flook*, 437 U.S. at 590"). While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform an article nor positively tie to a particular machine that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1- 4, 7 and 8, are rejected under 35 U.S.C. 102(e) as being anticipated by Wells et al., (US.7,328,153 B2).

As to claim 1, Wells discloses a method of comparing a query fingerprint to a candidate fingerprint, the method being characterized by comprising (abstract): determining a statistical model of the query fingerprint and/or a candidate fingerprint and, on the basis of the statistical model, deriving a threshold distance within which the query fingerprint and the candidate fingerprint may be declared similar (note, column 9, lines 10 - 31 and column 10, lines 20 - 47 explains the method of comparing the test fingerprint with a database of fingerprints. Also, see figure 1A. If the distance difference is smaller than the reference distance - accept. If the difference is greater - reject. Also

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see column 20, lines 47- 65 and column 21, lines 1 - 8 for the explanation of finger print matching and determining the valid match).

As to claim 2, Wells discloses a method of matching a query object to a known object, wherein a plurality of candidate fingerprints representing a plurality of candidate objects are pre-stored in a database, the method comprising receiving an information signal forming part of the query object and constructing a query fingerprint there from and comparing the query fingerprint to a candidate fingerprint in the database, the method being characterized by the further steps of: determining a statistical model for the query fingerprint and/or the candidate fingerprint; and on the basis of the statistical model, deriving a threshold distance within which the query fingerprint and the candidate fingerprint may be declared similar (note, the stored database consists of (column 19, lines 63 - 65 ,column 9, lines 59 - 67; column 10, lines 20 - 47) signal conditioning, sampling for finger prints, and storing for determining a query fingerprint and a test fingerprint (column 9, lines 39 – 59, column 19, lines 63 - 65) the fingerprint matching is explained).

Regarding claim 3, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 2.

As to claim 4, Wells discloses the method of claim 1, wherein the statistical model comprises the result of performing an internal correlation on the query fingerprint and/or the candidate fingerprint (column 20, lines 47- 67 and column 21, line 1 - 9 explains the steps in internal fingerprint matching process. The steps in correlation

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matching are explained in detail although, the word “correlation” is not used. Also, see figures 7A and 7B for details in the steps of analysis).

As to claim 7, Wells discloses apparatus for matching a query object to a known object, the apparatus comprising a fingerprint extraction module (110) for receiving an information signal forming part of a query object and constructing a query fingerprint therefrom and a fingerprint matching module (210) for comparing the query fingerprint to candidate fingerprints stored in a database (215) to one or more candidate fingerprints, the apparatus being characterized by also comprising (note, column 9, lines 10 - 31 and column 10, lines 20 - 47 explains the method of comparing the test fingerprint with a database of fingerprints. Also, see figure 1A. If the distance difference is smaller than the reference distance - accept. If the difference is greater - reject. Also see column 20, lines 47- 65 and column 21, lines 1 - 8 for the explanation of finger print matching and determining the valid match).

a statistical module (120) for determining a statistical model of the query fingerprint and/or one or more of the one or more candidate fingerprints;
a threshold determiner (120) deriving, on the basis of the statistical model, a threshold distance T within which the query fingerprint and a potentially best matching candidate fingerprint may be declared similar (note, column 9, lines 10 - 31 and column 10, lines 20 - 47 explains the method of comparing the test fingerprint with a database of fingerprints. Also, see figure 1A. If the distance difference is smaller than the reference distance - accept. If the difference is greater - reject. Also see column 20, lines 47- 65 and column 21, lines 1 - 8 for the explanation of finger print matching and determining

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the valid match),(column 19, lines 63 - 65 ,column 9, lines 59 - 67; column 10, lines 20 - 47) signal conditioning, sampling for finger prints, and storing for determining a query fingerprint and a test fingerprint (column 9, lines 39 – 59, column 19, lines 63 - 65) the fingerprint matching is explained ; and

an identification module (230) arranged such that if a candidate fingerprint is found to be separated from the query fingerprint by a distance less than the threshold distance T, and the distance between the candidate and the query fingerprint is less than the distance between any other candidate fingerprint and the query fingerprint, then the candidate fingerprint is declared the best matching candidate fingerprint and the candidate object represented by the best matching candidate fingerprint and the query object represented by the query fingerprint are deemed to be the same. (Figure 16 and column 30, line 45 to 58. The processor (1602, figure 16 – processes the data received from 1604 – and generates fingerprints, compares and stores the data in 1606, column 10 line 20 to 48 and the processor (1602) in figure 16 and figure explains the process associated with the device. The processor consists of the modules to perform the set functions (column 30 line 10 to 34), threshold determination – (column 23 line 33 to 36) is performed by the processor (figure 16, element 1602), Figure 16 (element 1602) the process is explained with the help of figure 7, and column 20, line 47 to 67 and column 21 line 1 to 8).

Regarding claim 8, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 7.

Allowable Subject Matter

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6. Claims 5, 6 and 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the prior art on record teaches or fairly suggests, wherein the fingerprints comprise a plurality of frames containing binary values and the statistical model is computed for the query fingerprint by determining a transition probability q for the query fingerprint by determining how many bits of a frame of the query fingerprint $F(m,k)$ are different from their corresponding bit in their preceding fingerprint frame $F(m,k-1)$ and dividing the number of transitions by a maximum value $M^*(k-1)$, which would be obtained if all fingerprint bits were of an opposite state to their corresponding preceding bit, where each fingerprint comprises M bits per frame and spans K frames, in which k is the frame index (ranging from 0 to K) and m is the bit-index within a frame (ranging from 0 to M), as required by claim 5 and 9.

As to claims 6 and 10, Wells discloses the method of claim 5, wherein the threshold distance T is computed from the following equation based on a desired False Acceptance Rate (FAR): claim 6 and 10 contains formula, $FAR = 1 - 2^{-\text{erfc} \cdot \text{function} \cdot (1 - 2^{-T^2 \cdot n \cdot (1 + (1 - 2^{-q})^2 - (1 - 2^{-q})^2)})}$,

Other prior art cited

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Holm et al.,(US.7,013,301 B2) discloses audio fingerprint system and method.

Reisman et al., (US. 7,142,699 B2) discloses fingerprint matching using ridge features maps.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHEELA C. CHAWAN whose telephone number is (571)272-7446. The examiner can normally be reached on 7.30- 5.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on 571-272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)? If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sheela C Chawan/

3/27/09

Primary Examiner, Art Unit 2624

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